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| APPLICATION NO.                        | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/988,470                             | 11/20/2001  | Akihiro Kirisawa     | 03830045AA          | 8763             |
| 7590 03/06/2006                        |             |                      | EXAMINER            |                  |
| Whitham, Curtis & Christofferson, P.C. |             |                      | KENDALL, CHUCK O    |                  |
| 11491 Sunset Hills Road                |             |                      | ART UNIT            |                  |
| Suite 340                              |             |                      | PAPER NUMBER        |                  |
| Reston, VA 20190                       |             |                      | 2192                |                  |

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/988,470

Applicant(s)

KIRISAWA, AKIHIRO

Examiner

Chuck O. Kendall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the amendment filed 12/14/05.
2. Claims 1 – 15 have been amended and are pending.

### **Claim Rejections - 35 USC 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 –12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warmink USPN 6,301,709 B1 (art of record) in view of Herh et al. USPN 5,268,928 (art being made of record) and further in view of Nookala et al. USPN 5,878,257 (art being made of record).

Regarding claim 1, Warmink discloses a computer program updating system having a communication function comprising:

a first processor which operates by referring to a computer firmware program stored (FIG. 1, see FIRST CIRCUIT PACT, 20 and associated text); and

a second processor which executes update of said firmware program by using said communication function with an external unit, and executes an update control of said (FIG. 1, see SECOND CIRCUIT PACK, 30, and associated text for updating see, 4:12 – 17). Although,

Warmink doesn't disclose the program being firmware and a second processor executing the update control of said program when a fault of said first processor is detected or monitoring an operation of the first processor, he does disclose a first and

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second circuit pack in which one of the first the circuit packs is designated a master and or a slave, in order to receive requests for updating (2:30 – 45) and he further discloses that a check is made to the software to determine whether or not an update should occur (5:28 – 32).

However, Herh in an analogous art and similar configuration does disclose, firmware updating including a second processor which monitors the progress of the first processor and upon performing an error processing including error checking and verification initiates an update (2:23 – 40, 5:20 – 30, and FIG.2, 128 and 144).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Warmink and Herh, because it would enable the firmware upgrades to be implemented faster and with less manual intervention (Herh, 1:47-50).

Warmink as modified by Herh, doesn't disclose the use of Flash ROM, however Nookala in a similar configuration discloses allowing Firmware to be dynamically written in to a programmable memory 2:10 – 15, and further states in 1:19 – 35, that flash memory allows for in-system update ability under system processor control. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Warmink and Herh with Nookala because, it would enable in system updating more efficient.

Regarding claim 2, the program updating system having the communication function according to claim 1, wherein said second processor transmits a reset signal to said first processor for every predetermined cycles, and monitors a response pulse which is transmitted from said first processor in response to said reset signal, and transmits a compulsory reset signal to said first processor when said response pulse can not be detected within a predetermined period (Warmink, 2:32 - 55, see reset).

Regarding claim 3, the program updating system having the communication function according to claim 2, further comprising;

an activation pulse generating circuit which generates an activation pulse to activate said second processor (4:20 – 25), wherein said second processor starts transmitting of said reset signal in response to said activation pulse outputted from said activation pulse generating circuit (Warmink, 2:35 – 45, see receiving request and answering them).

Regarding claim 4, the program updating system having the communication function according to claim 3, further comprising:

a buffer which transiently stores a program to be used for executing said firmware program update, wherein said second processor transfers said program stored in said buffer to said first processor for writing into said flash ROM (Nookala, Figure 1, 103), after an operation of storing said program in said buffer is completed (Warmink, 1 : 53 - 57, see memory storage area).

Regarding claim 5, the program updating system having the communication function according to claim 1, further comprising..

an activation pulse generating circuit which generates an activation pulse to activate said second processor, wherein said second processor starts transmitting of a reset signal to said first processor in response to said activation pulse outputted from said activation pulse generating circuit (Warmink, 2: 33 -35, for activation pulse see receiving reset and start).

Regarding claim 6, the program updating system having the communication function according to claim 5, further comprising:

a buffer which transiently stores a firmware update program for executing said update control, wherein said second processor transfers said program stored in said buffer to said first processor for writing into said flash ROM (Nookala, Figure 1, 103), after an operation of storing said program to said buffer is completed (Warmink, 1:55 - 65).

Regarding claim 7, the program updating system having the communication function according to claim 1, further comprising:

a buffer which transiently stores a program for executing said firmware update, wherein said second processor transfers said program stored in said buffer to said first processor for writing into said flash ROM (Nookala, Figure 1, 103), after an operation of storing said program to said buffer is completed (Warmink, 1:55 - 65).

Regarding claim 8, the program updating system having the communication function according to claim 2, further comprising;

an activation monitoring circuit which generates an activation pulse to activate said second processor and monitors transmission of an activation response pulse which is outputted from said second processor in response to said activation pulse, wherein said activation monitoring circuit transmits a compulsory reset signal to said second processor when said activation response pulse can not be detected within the predetermined period (Warmink, 3:30 - 55, see reset and see answering request, also see 2:30 - 37, and 65 - 67, for circuit pack which did not receive signal (for pulse not detected)).

Regarding claim 9, the program updating system having the communication function according to claim 8, further comprising;

a buffer which transiently stores a program for executing said firmware update, wherein said second processor transfers said program stored in said buffer to said first processor for writing into said flash ROM (Nookala, Figure 1, 103), after an operation of storing said program to said buffer is completed (Warmink, 1:55 - 65).

Regarding claim 10, the program updating system having the communication function according to claim 1, further comprising:

an activation monitoring circuit which generates an activation pulse to activate said second processor and monitors transmission of an activation response pulse

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outputted from said second processor in response to said activation pulse, wherein said activation monitoring circuit transmits a compulsory reset signal to said second processor when said activation response pulse can not be detected within the predetermined period (Warmink, 3:30 - 55, see reset and see answering request, also see 2:30 - 39 and 65 - 67, for circuit pack which did not receive signal (for pulse not detected)).

Regarding claim 11, the program updating system having the communication function according to claim 10, further comprising;

a buffer which transiently stores a program for executing said firmware update, wherein said second processor transfers said program stored in said buffer to said first processor for writing into said flash ROM (Nookala, Figure 1, 103), after an operation of storing said program to said buffer is completed (Warmink, 1: 45 - 65).

Regarding claim 12, which recites the method version of claim 1, see rationale as previously discussed above.

Regarding claim 15, the program updating method using the communication function according to claim 12, further comprising;

providing an activation control circuit which controls activation and a stop of said second processor;

transmitting by said second processor transmits an activation response pulse to said activation control circuit for every predetermined cycle;

executing by said activation control circuit a stop control of said second processor, when said activation response pulse can not be detected within a predetermined period (Warmink, 3:30 - 55, see reset and see answering request, also see 2:30 - 37, and 65 - 67, for circuit pack which did not receive signal (for pulse not detected)).

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warmink USPN 6,301,709 B1 (art of record) in view of Herh et al. USPN 5,268,928 (art being made of record) in view of Nookala et al. USPN 5,878,257 as applied in claims 12 and further in view of Bishop USPN 4,823,256 (art of record).

Regarding claim 13, Warmink as modified by Herh discloses all the claimed limitations as applied in claim 12 above. Although Warmink doesn't explicitly disclose wherein transferring by said second processor a program obtained by using said communication function to said first processor for writing into said flash ROM (Nookala, Figure 1, 103) during a stop of said first processor, Warmink does mention transmitting resetting signals (Warmink, 2:33 - 45).

Bishop discloses in an analogous art stopping execution of normal tasks, to freeze the state of the active processor and reset the internal processor state to the second processor (Bishop, 21:50 – 65).

Therefore it would have been obvious to one of ordinary skills in the art at the time invention was made to combine Warmink and Herh and Nookala, with Bishop because stopping the processor would enable it to check its internal state before transferring control over to the second processor.

Regarding claim 14, Bishop further discloses the program updating method using the communication function according to claim 13, further comprising;

providing an activation control circuit which controls activation and a stop of said second processor, transmitting by said second processor an activation response pulse to said activation control circuit for every predetermined number cycles, and said activation control circuit executes a stop control of said second processor, when said activation response pulse can not be detected within a predetermined period (Bishop, see 13:45 – 50, for sanity timers).



***Response to Arguments***

6. Applicant's arguments with respect to claims 1 - 15 have been considered but are moot in view of the new ground(s) of rejection. And regarding Applicant's new amendments, Herh et al. USPN 5,268,928 and Nookala et al. USPN 5,878,257 are being cited to teach the newly added limitations.

**Correspondence information**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

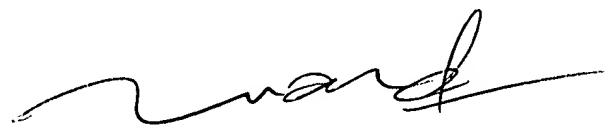
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.



TUAN DAM  
SUPERVISORY PATENT EXAMINER